SYNTHETIC MICROSPHERES
AND METHODS OF MAKING SAME

Abstract of the Disclosure

A synthetic microsphere having a low alkali metal oxide content and methods of forming the microsphere and its components are provided. The synthetic microsphere is substantially chemically inert and thus a suitable replacement for natural cenospheres, particularly in caustic environments such as cementitious mixtures. The synthetic microsphere can be made from an agglomerate precursor that includes an aluminosilicate material, such as fly ash, a blowing agent such as sugar, carbon black, and silicon carbide, and a binding agent. The synthetic microsphere is produced when the precursor is fired at a pre-determined temperature profile so as to form either solid or hollow synthetic microspheres depending on the processing conditions and/or components used.

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